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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/806,263	06/26/2002	Myeong Heon Um	SHI 2440	6594

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EXAMINER
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KUGEL, TIMOTHY J

ART UNIT	PAPER NUMBER
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1712

DATE MAILED: 12/08/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

09/806,263

Applicant(s)

UM ET AL.

Examiner

Timothy J. Kugel

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-7 and 10-13 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1,3-5 and 7 is/are rejected.
- 7) ☒ Claim(s) 2,4,6,7 and 10-13 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 26 June 2002 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

## Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

## Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date \_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_.

**DETAILED ACTION**

1. Claims 1-7 and 10-13 are pending as amended 28 March 2001, claims 8 and 9 being cancelled.

***Priority***

2. Receipt is acknowledged of papers submitted under 35 U.S.C. § 119(a)-(d), which papers have been placed of record in the file.

***Information Disclosure Statement***

3. There is no Information Disclosure Statement included with this application.

***Oath/Declaration***

4. There are no objections to the Oath/Declaration.

***Drawings***

5. The drawings were received on 26 June 2002. These drawings are not acceptable.
6. New corrected drawings in compliance with 37 CFR § 1.121(d) are required in this application because they are indecipherable. Applicant is advised to employ the services of a competent patent draftsman outside the Office, as the U.S. Patent and Trademark Office no longer prepares new drawings. The corrected drawings are required in reply to the Office action to avoid abandonment of the application. The requirement for corrected drawings will not be held in abeyance.

***Specification***

7. The lengthy specification has not been checked to the extent necessary to determine the presence of all possible minor errors. Applicant's cooperation is

requested in correcting any errors of which applicant may become aware in the specification.

8. The abstract of the disclosure is objected to because the abstract of the disclosure does not commence on a separate sheet in accordance with 37 CFR § 1.52(b)(4). A new abstract of the disclosure is required and must be presented on a separate sheet, apart from any other text. Correction is required. See MPEP § 608.01(b).

9. 35 U.S.C. § 112, first paragraph, requires the specification to be written in "full, clear, concise, and exact terms." The specification is replete with terms that are not clear, concise and exact. The specification should be revised carefully in order to comply with 35 U.S.C. § 112, first paragraph. Examples of some unclear, inexact or verbose terms used in the specification are: Page 1 Lines 13-16 recites, "The coagulation means generally sedimentation treatment in case of separation and removal of impurities which cause turbid water or color of water, but when the particles in the turbid water are too small to be sedimented, it means enlarging the particles in the turbid water to the large size particle and then sedimenting them." Page 1 Line 23 to Page 2 Line 1 recites, "When the wastewater is filtered to re-use, it is required to make the amount of the solid matter in the filtered water to be of little quantity by coagulating and filtering effectively for lessening a load." Page 3 Lines 16 and 17 recite, "Moreover, it is not found the precipitate of the coagulant, there occurs less the sludge than the inorganic coagulant, and the toxicity is very low." The acronyms BOD (Page 2 Line 3), COD (Table 1 Column 2 Heading, Page 13 Line 5, Table 2 Column 3 Heading,

etc.), SS (Table 1 Column 3 Heading, Table 2 Column 4 Heading, Page 14 Line 11, etc.) are used without definition.

10. A substitute specification including the claims in proper idiomatic English and in compliance with 37 CFR § 1.52(a) and (b) is required pursuant to 37 CFR § 1.125(a) because the specification is replete with terms that are not clear, concise and exact as shown by the examples above, and it is not in proper idiomatic English.

11. A substitute specification must not contain new matter. The substitute specification must be submitted with markings showing all the changes relative to the immediate prior version of the specification of record. The text of any added subject matter must be shown by underlining the added text. The text of any deleted matter must be shown by strike-through except that double brackets placed before and after the deleted characters may be used to show deletion of five or fewer consecutive characters. The text of any deleted subject matter must be shown by being placed within double brackets if strike-through cannot be easily perceived. An accompanying clean version (without markings) and a statement that the substitute specification contains no new matter must also be supplied. Numbering the paragraphs of the specification of record is not considered a change that must be shown.

***Claim Interpretation***

12. For the purposes of examination, the terms 'the powdery shells', and 'shell powder' have been taken to mean the shells of mollusks pulverized into a powder. The calcium component of mollusk shells has been construed as calcium carbonate,  $\text{CaCO}_3$  (Russell-Hunter, Page 3 Paragraph 1)

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13. For the purposes of examination, gypsum is construed to be calcium sulfate  $\text{CaSO}_4$  (Helman et al. Page 1 Lines 1-2).

14. For the purposes of examination, alginate and sodium alginate have been taken to be a major constituent of brown algae (Silva et al. Paragraph 1 and Le Du et al, U.S. Patent 4,565,635, Column 2 Line 66 – Column 3 Line 3).

### ***Claim Objections***

15. Claims 4 and 11 are objected to because of the following informalities: Both claims 4 and 11 recite "...the powdery shells," without antecedent basis. For the purposes of examination both claims 4 and 11 were construed to recite, "...shell powder," The examiner suggests that the claims be amended as such.

16. Claims 6 and 13 are objected to under 37 CFR 1.75(c), as being of improper dependent form for failing to further limit the subject matter of a previous claim.

Applicant is required to cancel the claim(s), or amend the claim(s) to place the claim(s) in proper dependent form, or rewrite the claim(s) in independent form. Claim 6 recites, "The coagulant composition according to claim 5, wherein the calcium component is a mixture of..." however claim 5 recites, "...wherein the calcium component comprises gypsum powder." Claim 13 recites, "The coagulant composition according to claim 12, wherein the calcium component is a mixture of..." however claim 12 recites, "...wherein the calcium component comprises gypsum powder." For the purposes of examination, claim 6 was construed to be dependent on claim 4, and claim 13 was construed to be dependent on claim 11. The examiner suggests that the claims be amended as such.

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17. Claim 7 is objected to under 37 CFR § 1.75(c), as being of improper dependent form for failing to further limit the subject matter of a previous claim. Applicant is required to cancel the claim(s), or amend the claim(s) to place the claim(s) in proper dependent form, or rewrite the claim(s) in independent form. Claim 7 recites "...wherein the sea brown algae of the organic coagulant is a sea tangle powder or extract thereof" but sea tangle is defined as any of various brown algae, especially of the genus *Laminaria* (The American Heritage Dictionary of the American Language: Fourth Edition. 2000).

***Claim Rejections - 35 USC § 102***

18. The following is a quotation of the appropriate paragraphs of 35 U.S.C. § 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

19. Claims 1, 3-5, and 7 are rejected under 35 U.S.C. § 102(b) as being anticipated by Shioi et al. (U.S. Patent 4,602,264). Shioi et al. ('264) teach a composition comprising sodium alginate, calcium components including calcium carbonate and calcium sulfate, and aluminum components including aluminum sulfate (Column 10 Lines 33-61).

20. Claims 1, 3-4, and 7 are rejected under 35 U.S.C. § 102(b) as being anticipated by Gubela (German Patent DE2340326). Gubela ('326) teaches a chemical treatment for aqueous effluents comprising aluminum sulfate, calcium carbonate, and alginate (Abstract).

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21. Claims 1, 4-5, 7 are rejected under 35 U.S.C. § 102(b) as being anticipated by Morton et al. (U.S. Patent 6,009,657). Morton et al. ('657) teaches a composition comprising alginate (Column 1 Lines 56-61 and Column 3 Lines 21-22); calcium salts including calcium sulfate (Column 2 Lines 19-21 and Column 2 Lines 49-53), calcium chloride (Column 4 Lines 1-5); and an aluminum component (Column 2 Lines 43-48 and Column 4 Lines 18-24).

22. Claims 1, 4-5, 7 are rejected under 35 U.S.C. § 102(b) as being anticipated by Sim (Japanese Patent JP411139927). Sim ('927) teaches a composition comprising alginate, a calcium component and an aluminum component (Abstract).

#### ***Allowable Subject Matter***

23. Claims 2, 6, and 10-13 are objected to as being dependent upon a rejected base claim, but would be allowable as construed above if rewritten in independent form including all of the limitations of the base claim and any intervening claims. Shioi et al. ('264), Gubela ('326), Morton et al. ('657), and Sim ('927) teach similar compositions, but fail to teach the specific ratio of 0.1 to 5 parts by weight of the aluminum component to 90 parts by weight of the calcium component and a ratio of from 2:8 to 5:5 of calcium carbonate to calcium sulfate in the calcium component.

#### ***Conclusion***

24. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

U.S. Patent 5,811,126 09-1998 Krishnamurthy, Thinnayam N.  
U.S. Patent 5,248,172 09-1993 Takeuchi et al.  
U.S. Patent 4,867,789 09-1989 Eida et al.  
U.S. Patent 4,565,635 01-1986 Le Du et al.



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U.S. Patent 4,966,713 10-1990 Keys et al.

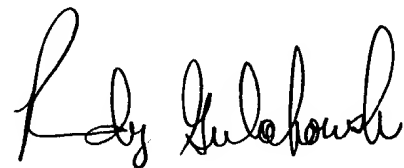
U.S. Patent 5,543,056 08-1996 Murcott et al.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Timothy J. Kugel whose telephone number is (571) 272-1460. The examiner can normally be reached on 7:00 AM - 4:00 PM Monday - Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Randy P. Gulakowski can be reached on (571) 272-1302. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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